

**COMPUTER READABLE RECORDING MEDIUM WHICH RECORDS
SERVICE-ORIENTED DIT CONSTRUCTION FOR INTERNET
PROTOCOL NETWORK SERVICE MANAGEMENT**

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BACKGROUND OF THE INVENTION

10 The present invention relates to a service-oriented DIT
(Directory Information Tree) construction, which is used in
an IP (Internet Protocol) network service management system
and which is recorded on the recording medium in a directory
server.

Currently, the IETF (Internet Engineering Task Force) is
vigorously studying policy sub-trees.

15 However, the IETF has not discuss relationships between the
customer sub-tree and policy sub-tree, specifically, creation
of rules based on service entries. Essentially, the customer
care system is required to operate networks. Moreover, the
customer care server requires a service oriented data structure
(corresponding to the customer tree in the present invention).
Where provisioning (setting to a NE (Network Element,
20 specifically, a router) is intended, the policy sub-tree is
needed in consideration of retrieval time, data operation, and
so on. However, mapping between sub-trees has not been studied.
Similarly, the scheme of reducing the data capacity has not
been studied by considering both the policy sub-tree and the
25 customer sub-tree. Various service types or changes of service

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Moreover, in the computer readable recording medium according to the present invention, each of plural service class definition entries further includes as an attribute a parameter representing a feature of a service corresponding to a service type and a pointer to a policy rule format entry to be applied to the service.

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the service entry 15 below the customers sub-tree 11. The policies sub-tree 13 holds the policy rule format entry 17 only.

The system sub-tree 14 is a sub-tree which is neutral to the customers sub-tree 11, the network sub-tree 12, and the policies sub-tree 13. In other words, the system sub-tree is the sub-tree which stores information which cannot be classified into only the customers sub-tree 11, the network sub-tree 12, and the policies sub-tree 13 but are related to all sub-trees. The system sub-tree 14 has the service class definition entry 18 below it.

Fig. 2 is a list showing attributes possessed by the service entry 15. The service type 21 specifies a band and a packet transfer priority. The name of one of plural service class definition entries 18 (Fig. 3) is used as an attribute value (shown with the arrow extending from the service entry 15 to the service class definition entry 18 in Fig. 1). The parameter 22 is the condition parameter having the possibility that it may be used as the condition of the policy entry 16. That is, the condition parameter 22 is referred to according to the type of policy entry, based on the attribute value of the condition parameter 41 existing in the policy rule format 17 (Fig. 4) corresponding to the policy rule entry. When attention is paid to a certain policy rule entry 16 (Fig. 5), the policy rule entry 16 can refer to an attribute within the service entry 15 because it has the attribute "policy rule format". In this

operation, the policy rule entry 16 refers to the policy rule format 17 corresponding to the policy rule entry 16 distinguished by referring to the attribute "policy rule format" (as shown with the arrow extending from the policy rule format 16 to the policy rule format entry 17) and then refers to the attribute value of the condition parameter 41 possessed by the policy rule format 17 is referred. This reference method allows the data capacity to be saved.

Numeral 23 represents part of the action parameter of a policy rule. There is as another action parameter PHB (per Hop Behavior) possessed by the service class definition entry. These parameters are related to each other as follows:

In the operation procedure, it is assumed that a service entry is first created and that a policy rule entry is next created and that the content of the policy rule is finally set to a router.

First, the service class definition entry is retrieved based on the service type information held by the service entry. The service class definition entry has PHB to its service class and a policy rule format entry. Next, a policy rule entry is created according to the policy rule format.

The policy rule entry, which has policy rule format information, can retrieve the action parameter 23 with PHB and Service ID as an action parameter, based on the service type information possessed by the policy rule format.

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The operation of the recording medium according to the present invention will be described below referring to Figs. 1 to 5.

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